Amendments to the Specification:

Please replace the paragraphs beginning at page 14, lines 1-21, with the following amended paragraphs:

$R_1$ = H, a cation (e.g., $Na^+$, $K^+$, $NH_4^+$) or a C1-C5 (i.e., a one, two, three, four or five carbon) substituted or unsubstituted carbon chain (e.g., a straight chain), wherein the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 (i.e., a one or two carbon) carbon chain; and

$R_2$ = a C15-C19 (i.e., a 15, 16, 17, 18, or 19 carbon) substituted or unsubstituted carbon chain (e.g., a straight chain) having a *cis* or *trans* double bond between the 9th and 10th carbons counting from the carbonyl carbon (C=O) and either: (i) a triple bond between the 12th and 13th carbons counting from the carbonyl (C=O) carbon or (ii) either a single or double bond between the 12th and 13th carbons and at least one ~~substituant~~ substituent at one or both of the 12th and 13th carbons, wherein the ~~substituants~~ substituents are selected from the group consisting of hydroxy, oxo, halogen, amino, cyano, azido, cyclopropane, cyclopropene, epoxy and a substituted or unsubstituted C1-C2 carbon chain. The substituents can be polar groups and/or hydrogen bond acceptors. The composition can further comprise an aqueous surfactant (or a combination of aqueous surfactants), and inhibitor of oxidation (or a combination of such inhibitors), or a permeation enhancer (or combination of permeation enhancers). The composition can also include: an aqueous surfactant and a permeation enhancer; an aqueous surfactant and an inhibitor of oxidation; or an aqueous surfactant, a permeation enhancer, and an inhibitor of oxidation.

Please replace the paragraph beginning at page 14, line 25 thru page 15, line 22, with the following amended paragraphs:

In various embodiments: $R_1$ is H or a cation; $R_1$ is a C1-C5 substituted or unsubstituted carbon chain, wherein the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2

carbon chain; $R_1$ is a C1-C5 substituted or unsubstituted carbon chain, wherein the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and an unsubstituted C1-C2 carbon chain; the C1-C2 carbon chain of one or both of $R_1$ and $R_2$ is substituted and the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, and epoxy; the C1-C2 carbon chain of one or both of $R_1$ and $R_2$ is substituted and the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, and amino; $R_1$ is a substituted C1 methyl; $R_1$ is a C1-C2 substituted or unsubstituted carbon chain; and $R_2$ is a C15-C19 substituted or unsubstituted carbon chain having a *cis* or *trans* double bond between the $9^{th}$ and $10^{th}$ carbons counting from the carbonyl (C=O) carbon and either: (i) a triple bond between the $12^{th}$ and $13^{th}$ carbons counting from the carbonyl (C=O) carbon or (ii) either a single or double bond between the $12^{th}$ and $13^{th}$ carbons and at least one substituant at one or both of the $12^{th}$ and $13^{th}$ carbons, wherein the ~~substituants~~ substituents are selected from the group consisting of hydroxy, oxo, halogen, amino, cyano, azido, cyclopropane, cyclopropene, epoxy and an unsubstituted C1-C2 carbon chain.

In other embodiments: the C1-C2 carbon chain of $R_2$ is substituted and the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, oxo, halogen, amino, cyano, azido, and epoxy; the C1-C2 carbon chain of $R_2$ is substituted and the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, oxo, halogen, azido, and amino; the C1-C2 carbon chain of $R_2$ is singly substituted; $R_1$ is H; $R_1$ is a cation (e.g., a fatty acid salt); $R_2$ is substituted only at one or both of $12^{th}$ and $13^{th}$ carbons counting from the carbonyl (C=O) carbon; $R_2$ is substituted only at the $12^{th}$ carbon counting from the carbonyl (C=O) carbon; $R_2$ is substituted only at the $13^{th}$ carbon counting from the carbonyl (C=O) carbon; with $R_2$ the ~~substituants~~ substituents are polar and are selected from the group consisting of: hydroxy, oxo, epoxy, halogen, amino, cyano and azido; within $R_2$ the ~~substituants~~ substituents are hydrogen bond acceptors and are selected from the group consisting of: hydroxy, oxo, epoxy, amino, cyano and azido; and within $R_2$ the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, oxo and epoxy.

Please replace the paragraphs beginning at page 16, lines 25-34, with the following amended paragraphs:

$R_1$ = H, a cation or a C1-C5 substituted or unsubstituted carbon chain, wherein the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain; and

$R_2$ = a C15-C19 substituted or unsubstituted carbon chain having a *cis* or *trans* double bond between the 9$^{th}$ and 10$^{th}$ carbons counting from the carbonyl (C=O) carbon and either: (i) a triple bond between the 12$^{th}$ and 13$^{th}$ carbons counting from the carbonyl (C=O) carbon or (ii) either a single or double bond between the 12$^{th}$ and 13$^{th}$ carbons and at least one ~~substituant~~ substituent at one or both of the 12$^{th}$ and 13$^{th}$ carbons, wherein the ~~substituants~~ substituents are selected from the group consisting of hydroxy, oxo, halogen, amino, cyano, azido, cyclopropane, cyclopropene, epoxy and a substituted or unsubstituted C1-C2 carbon chain.

Please replace the paragraphs beginning at page 17, lines 1-30, with the following amended paragraphs:

In various embodiments: $R_1$ is H or a cation; $R_1$ is a C1-C5 substituted or unsubstituted carbon chain, wherein the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain; $R_1$ is a C1-C5 substituted or unsubstituted carbon chain, wherein the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and an unsubstituted C1-C2 carbon chain; the C1-C2 carbon chain of one or both of $R_1$ and $R_2$ is substituted and the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, and epoxy; the C1-C2 carbon chain of one or both of $R_1$ and $R_2$ is substituted and the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, and amino; $R_1$ is a substituted C1 methyl; $R_1$ is a C1-C2 substituted or unsubstituted carbon chain; and $R_2$ is a C15-C19 substituted or unsubstituted carbon chain having a *cis* or *trans* double bond between the 9$^{th}$ and 10$^{th}$ carbons counting from

the carbonyl (C=O) carbon and either: (i) a triple bond between the 12th and 13th carbons counting from the carbonyl (C=O) carbon or (ii) either a single or double bond between the 12th and 13th carbons and at least one ~~substituant~~ substituent at one or both of the 12th and 13th carbons, wherein the ~~substituants~~ substituent are selected from the group consisting of hydroxy, oxo, halogen, amino, cyano, azido, cyclopropane, cyclopropene, epoxy and an unsubstituted C1-C2 carbon chain.

In other embodiments: the C1-C2 carbon chain of $R_2$ is substituted and the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, oxo, halogen, amino, cyano, azido, and epoxy; the C1-C2 carbon chain of $R_2$ is substituted and the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, oxo, halogen, azido, and amino; the C1-C2 carbon chain of $R_2$ is singly substituted; $R_1$ is H; $R_1$ is a cation (e.g., a fatty acid salt); $R_2$ is substituted only at one or both of 12th and 13th carbons counting from the carbonyl (C=O) carbon; $R_2$ is substituted only at the 12th carbon counting from the carbonyl (C=O) carbon; $R_2$ is substituted only at the 13th carbon counting from the carbonyl (C=O) carbon; with $R_2$ the ~~substituants~~ substituents are polar and are selected from the group consisting of: hydroxy, oxo, epoxy, halogen, amino, cyano and azido; within $R_2$ the ~~substituants~~ substituents are hydrogen bond acceptors and are selected from the group consisting of: hydroxy, oxo, epoxy, amino, cyano and azido; and within $R_2$ the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, oxo and epoxy.

Please replace the paragraphs beginning at page 19, line 6 thru page 20, line 14, with the following amended paragraphs:

$R_1$ = H, a cation (e.g., a fatty acid salt) or a C1-C5 substituted or unsubstituted carbon chain, wherein the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain; and

$R_2$ = a C15-C19 substituted or unsubstituted carbon chain having a *cis* or *trans* double bond between the 9th and 10th carbons counting from the carbonyl (C=O) carbon and either: (i) a

triple bond between the 12th and 13th carbons counting from the carbonyl (C=O) carbon or (ii) either a single or double bond between the 12th and 13th carbons and at least one ~~substituant~~ substituent at one or both of the 12th and 13th carbons, wherein the ~~substituants~~ substituents are selected from the group consisting of hydroxy, oxo, halogen, amino, cyano, azido, cyclopropane, cyclopropene, epoxy and a substituted or unsubstituted C1-C2 carbon chain.

In various embodiments: the composition further comprises an aqueous surfactant, $R_1$ is H or a cation ; $R_1$ is a C1-C5 substituted or unsubstituted carbon chain, wherein the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain; $R_1$ is a C1-C5 substituted or unsubstituted carbon chain, wherein the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and an unsubstituted C1-C2 carbon chain; the C1-C2 carbon chain of one or both of $R_1$ and $R_2$ is substituted and the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, and epoxy; the C1-C2 carbon chain of one or both of $R_1$ and $R_2$ is substituted and the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, and amino; $R_1$ is a substituted C1 methyl; $R_1$ is a C1-C2 substituted or unsubstituted carbon chain; and $R_2$ is a C15-C19 substituted or unsubstituted carbon chain having a *cis* or *trans* double bond between the 9th and 10th carbons counting from the carbonyl (C=O) carbon and either: (i) a triple bond between the 12th and 13th carbons counting from the carbonyl (C=O) carbon or (ii) either a single or double bond between the 12th and 13th carbons and at least one ~~substituant~~ substituent at one or both of the 12th and 13th carbons, wherein the ~~substituants~~ substituents are selected from the group consisting of hydroxy, oxo, halogen, amino, cyano, azido, cyclopropane, cyclopropene, epoxy and an unsubstituted C1-C2 carbon chain.

In other embodiments: the C1-C2 carbon chain of $R_2$ is substituted and the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, oxo, halogen, amino, cyano, azido, and epoxy; the C1-C2 carbon chain of $R_2$ is substituted and the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, oxo, halogen, azido, and amino; the C1-C2 carbon chain of $R_2$ is singly substituted; $R_1$ is H; $R_1$ is a cation; $R_2$ is substituted only at one or

both of 12th and 13th carbons counting from the carbonyl (C=O) carbon; $R_2$ is substituted only at the 12th carbon counting from the carbonyl (C=O) carbon; $R_2$ is substituted only at the 13th carbon counting from the carbonyl (C=O) carbon; with $R_2$ the ~~substituants~~ substituents are polar and are selected from the group consisting of: hydroxy, oxo, epoxy, halogen, amino, cyano and azido; within $R_2$ the ~~substituants~~ substituents are hydrogen bond acceptors and are selected from the group consisting of: hydroxy, oxo, epoxy, amino, cyano and azido; and within $R_2$ the substituants are selected from the group consisting of: hydroxy, oxo and epoxy.

Please replace the paragraphs beginning at page 21, line 18 thru page 22, line 22, with the following amended paragraphs:

$R_1$ = H, a cation or a C1-C5 substituted or unsubstituted carbon chain, wherein the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain; and

$R_2$ = a C15-C19 substituted or unsubstituted carbon chain having a *cis* or *trans* double bond between the 9th and 10th carbons counting from the carbonyl (C=O) carbon and either: (i) a triple bond between the 12th and 13th carbons counting from the carbonyl (C=O) carbon or (ii) either a single or double bond between the 12th and 13th carbons and at least one ~~substituant~~ substituent at one or both of the 12th and 13th carbons, wherein the ~~substituants~~ substituents are selected from the group consisting of hydroxy, oxo, halogen, amino, cyano, azido, cyclopropane, cyclopropene, epoxy and a substituted or unsubstituted C1-C2 carbon chain.

In various embodiments: $R_1$ is H or a cation; $R_1$ is a C1-C5 substituted or unsubstituted carbon chain, wherein the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain; $R_1$ is a C1-C5 substituted or unsubstituted carbon chain, wherein the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and an unsubstituted C1-C2 carbon chain; the C1-C2 carbon chain of one or both of $R_1$ and $R_2$ is substituted and the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, and epoxy; the C1-C2 carbon chain of one or

both of $R_1$ and $R_2$ is substituted and the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, and amino; $R_1$ is a substituted C1 methyl; $R_1$ is a C1-C2 substituted or unsubstituted carbon chain; and $R_2$ is a C15-C19 substituted or unsubstituted carbon chain having a *cis* or *trans* double bond between the $9^{th}$ and $10^{th}$ carbons counting from the carbonyl (C=O) carbon and either: (i) a triple bond between the $12^{th}$ and $13^{th}$ carbons counting from the carbonyl (C=O) carbon or (ii) either a single or double bond between the $12^{th}$ and $13^{th}$ carbons and at least one ~~substituant~~ substituent at one or both of the $12^{th}$ and $13^{th}$ carbons, wherein the ~~substituants~~ substituents are selected from the group consisting of hydroxy, oxo, halogen, amino, cyano, azido, cyclopropane, cyclopropene, epoxy and an unsubstituted C1-C2 carbon chain.

In other embodiments: the C1-C2 carbon chain of $R_2$ is substituted and the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, oxo, halogen, amino, cyano, azido, and epoxy; the C1-C2 carbon chain of $R_2$ is substituted and the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, oxo, halogen, azido, and amino; the C1-C2 carbon chain of $R_2$ is singly substituted; $R_1$ is H; $R_1$ is a cation (e.g., a fatty acid salt); $R_2$ is substituted only at one or both of $12^{th}$ and $13^{th}$ carbons counting from the carbonyl (C=O) carbon; $R_2$ is substituted only at the $12^{th}$ carbon counting from the carbonyl (C=O) carbon; $R_2$ is substituted only at the $13^{th}$ carbon counting from the carbonyl (C=O) carbon; with $R_2$ the ~~substituants~~ substituents are polar and are selected from the group consisting of: hydroxy, oxo, epoxy, halogen, amino, cyano and azido; within $R_2$ the ~~substituants~~ substituents are hydrogen bond acceptors and are selected from the group consisting of: hydroxy, oxo, epoxy, amino, cyano and azido; and within $R_2$ the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, oxo and epoxy.

Please replace the paragraphs beginning at page 23, lines 17-26, with the following amended paragraphs:

$R_1$ = H, a cation or a C1-C5 substituted or unsubstituted carbon chain, wherein the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain; and

$R_2$ = a C15-C19 substituted or unsubstituted carbon chain having a *cis* or *trans* double bond between the 9$^{th}$ and 10$^{th}$ carbons counting from the carbonyl (C=O) carbon and either: (i) a triple bond between the 12$^{th}$ and 13$^{th}$ carbons counting from the carbonyl (C=O) carbon or (ii) either a single or double bond between the 12$^{th}$ and 13$^{th}$ carbons and at least one ~~substituant~~ substituent at one or both of the 12$^{th}$ and 13$^{th}$ carbons, wherein the ~~substituants~~ substituents are selected from the group consisting of hydroxy, oxo, halogen, amino, cyano, azido, cyclopropane, cyclopropene, epoxy and a substituted or unsubstituted C1-C2 carbon chain.

Please replace the paragraphs beginning at page 24, lines 11-23, with the following amended paragraphs:

$R_1$ = H, a cation or a C1-C5 substituted or unsubstituted carbon chain, wherein the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain;

$R_3$ = a C11 substituted or unsubstituted carbon chain having a *cis* double bond between the 9$^{th}$ and 10$^{th}$ carbons counting from the carbonyl (C=O) carbon, wherein the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, cyclopropene, epoxy and a substituted or unsubstituted C1-C2 carbon chain;

$R_4$ = a C2-C6 substituted or unsubstituted carbon chain wherein the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain;

X and Y are independently a substituted or unsubstituted methyl or S provided at least one or X and Y is S and wherein the ~~substituants~~ substituents on the methyl selected from the group consisting of: halogen, hydrogen, amino, and hydroxy.

Please replace the paragraphs beginning at page 25, lines 3-21, with the following amended paragraphs:

$R_1$ = H, a cation or a C1-C5 substituted or unsubstituted carbon chain, wherein the ~~substituants~~ substituents are selected from the group consisting of: hydroxy, halogen, amino, cyano, cyclopropane, epoxy and a substituted or unsubstituted C1-C2 carbon chain; and

$R_2$ = a C15-C19 substituted or unsubstituted carbon chain having a single bond between the 9$^{th}$ and 10$^{th}$ carbons counting from the carbonyl (C=O) carbon and either: (i) a triple bond between the 12$^{th}$ and 13$^{th}$ carbons counting from the carbonyl (C=O) carbon or (ii) either a single or double bond between the 12$^{th}$ and 13$^{th}$ carbons counting from the carbonyl (C=O) carbon and at least one ~~substituant~~ substituent at one or both of the 12$^{th}$ and 13$^{th}$ carbons, wherein the ~~substituants~~ substituents are selected from the group consisting of hydroxy, halogen, amino, cyano, cyclopropane, cyclopropene, epoxy and a substituted or unsubstituted C1-C2 carbon chain.

In various embodiments: the composition further comprises an aqueous surfactant; $R_2$ is a C15-C19 substituted or unsubstituted carbon chain having a single bond between the 9$^{th}$ and 10$^{th}$ carbons and a single bond between the 12$^{th}$ and 13$^{th}$ carbons counting from the carbonyl (C=O) carbon and at least one ~~substituant~~ substituent at one or both of the 12$^{th}$ and 13$^{th}$ carbons counting from the carbonyl (C=O) carbon, wherein the ~~substituants~~ substituents are selected from the group consisting of hydroxy, halogen, amino, cyano, cyclopropane, cyclopropene, epoxy and a substituted or unsubstituted C1-C2 carbon chain; the 12$^{th}$ and 13$^{th}$ carbons are substituted with an epoxy group; and 12$^{th}$ carbon is substituted with a hydroxy group.